

motile filaments, our first *glimpse* is generally a passing one, caught during the instantaneous production of a shadow. Or, although our objectives may already be considered almost perfect, that perfection is capable of increase, and we may therefore hope, by a single step in advance, to render the *unseen* of today *the thing seen* of tomorrow.

II.—*Revision of the Family Pennatulidæ, with Descriptions of some new Species in the British Museum.* By Dr. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.E.S. &c.

[With two Plates.]

DR. HERKLOTS, the curator of the Royal Museum at Leyden, has lately published in the last Part of the 'Bijdragen tot de Dierkunde,' part vii. 1858, a monograph of this family, describing and figuring several new species. I shall use his work as the basis of this communication, as far as regards the species he describes, which I shall attempt to divide into groups for more easy determination.

Tribe I. FUNICULINEÆ, or *Junciformes*, are elongated Seapens with very small pinnules.

A. *The Cells armed with spinules.*

1. FUNICULINA, Lamk.

* *Axis quadrangular.*

1. *F. quadrangularis*, Johnston, Brit. Zooph. t. 31. Scotland.

** *Axis cylindrical.*

2. *F. Christii*, Sars, Fn. Litt. Norv. ii. t. 12. f. 7-12. Coast of Norway.

3. *F. Finmarchica*, Sars, Fn. Litt. Norv. ii. t. 11. Coast of Finmark.

B. *Cells fleshy, not spinulose.*

2. VIRGULARIA, Lamk. Axis stony, tapering at each end. Cells not produced.

* *Pinnules well developed, digitate, diverging from the rachis.*

1. *V. Vanbenedensis*, Herklots, Not. 11. t. 7. f. 7. *Hab.* —.

2. *V. Ellisii*. Elongate. Rachis cylindrical. Base elongate, nearly one-third the entire length; lower part much dilated, club-shaped. The lower pinnules adpressed, far apart, nearly transverse as regards the rachis; the upper ones lunate, far

motile filaments, our first *glimpse* is generally a passing one, caught during the instantaneous production of a shadow. Or, although our objectives may already be considered almost perfect, that perfection is capable of increase, and we may therefore hope, by a single step in advance, to render the *unseen* of today *the thing seen* of tomorrow.

II.—*Revision of the Family Pennatulidæ, with Descriptions of some new Species in the British Museum.* By Dr. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.E.S. &c.

[With two Plates.]

DR. HERKLOTS, the curator of the Royal Museum at Leyden, has lately published in the last Part of the 'Bijdragen tot de Dierkunde,' part vii. 1858, a monograph of this family, describing and figuring several new species. I shall use his work as the basis of this communication, as far as regards the species he describes, which I shall attempt to divide into groups for more easy determination.

Tribe I. FUNICULINEÆ, or *Junciformes*, are elongated Seapens with very small pinnules.

A. *The Cells armed with spinules.*

1. FUNICULINA, Lamk.

* *Axis quadrangular.*

1. *F. quadrangularis*, Johnston, Brit. Zooph. t. 31. Scotland.

** *Axis cylindrical.*

2. *F. Christii*, Sars, Fn. Litt. Norv. ii. t. 12. f. 7-12. Coast of Norway.

3. *F. Finmarchica*, Sars, Fn. Litt. Norv. ii. t. 11. Coast of Finmark.

B. *Cells fleshy, not spinulose.*

2. VIRGULARIA, Lamk. Axis stony, tapering at each end. Cells not produced.

* *Pinnules well developed, digitate, diverging from the rachis.*

1. *V. Vanbenedensis*, Herklots, Not. 11. t. 7. f. 7. *Hab.* —.

2. *V. Ellisii*. Elongate. Rachis cylindrical. Base elongate, nearly one-third the entire length; lower part much dilated, club-shaped. The lower pinnules adpressed, far apart, nearly transverse as regards the rachis; the upper ones lunate, far

motile filaments, our first *glimpse* is generally a passing one, caught during the instantaneous production of a shadow. Or, although our objectives may already be considered almost perfect, that perfection is capable of increase, and we may therefore hope, by a single step in advance, to render the *unseen* of today *the thing seen* of tomorrow.

II.—*Revision of the Family Pennatulidæ, with Descriptions of some new Species in the British Museum.* By Dr. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.E.S. &c.

[With two Plates.]

DR. HERKLOTS, the curator of the Royal Museum at Leyden, has lately published in the last Part of the 'Bijdragen tot de Dierkunde,' part vii. 1858, a monograph of this family, describing and figuring several new species. I shall use his work as the basis of this communication, as far as regards the species he describes, which I shall attempt to divide into groups for more easy determination.

Tribe I. FUNICULINEÆ, or *Junciformes*, are elongated Seapens with very small pinnules.

A. *The Cells armed with spinules.*

1. FUNICULINA, Lamk.

* *Axis quadrangular.*

1. *F. quadrangularis*, Johnston, Brit. Zooph. t. 31. Scotland.

** *Axis cylindrical.*

2. *F. Christii*, Sars, Fn. Litt. Norv. ii. t. 12. f. 7-12. Coast of Norway.

3. *F. Finmarchica*, Sars, Fn. Litt. Norv. ii. t. 11. Coast of Finmark.

B. *Cells fleshy, not spinulose.*

2. VIRGULARIA, Lamk. Axis stony, tapering at each end. Cells not produced.

* *Pinnules well developed, digitate, diverging from the rachis.*

1. *V. Vanbenedensis*, Herklots, Not. 11. t. 7. f. 7. *Hab.* —.

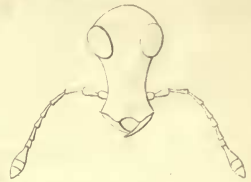
2. *V. Ellisii*. Elongate. Rachis cylindrical. Base elongate, nearly one-third the entire length; lower part much dilated, club-shaped. The lower pinnules adpressed, far apart, nearly transverse as regards the rachis; the upper ones lunate, far



HUCUS



MYCTIS



ETHNECA



PLINTHERIA



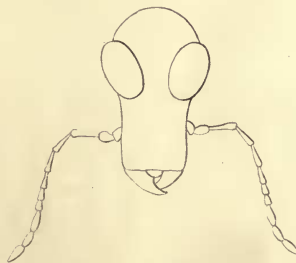
NESSIA



ESOCUS



DYSNOS



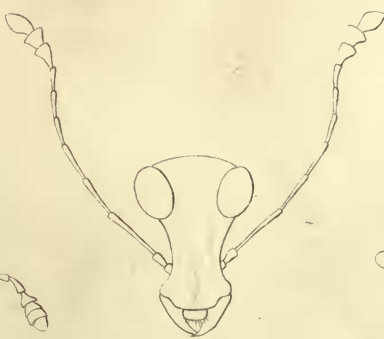
APATENIA



MISTHOSIMA



HYPSEUS



ECZESARIS



PHAULIMIA



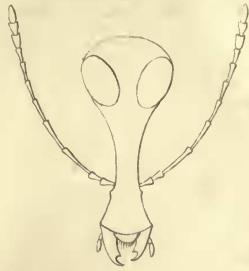
PHEOCHROTUS



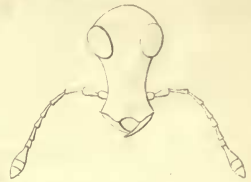
GENETH



HUCUS



MYCTIS



ETHNECA



PLINTHARIA



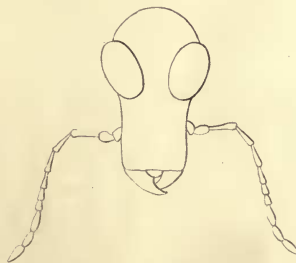
NESSIA



ESOCUS



DYSNOS



APATENIA



MISTHOSIMA



HYPSEUS



ECZESARIS



PHAULIMIA



PHEOCHROTUS



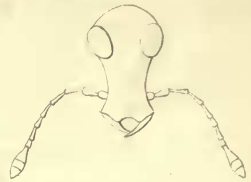
GENETH



HUCUS



MYCTIS



ETHNECA



PLINTHERIA



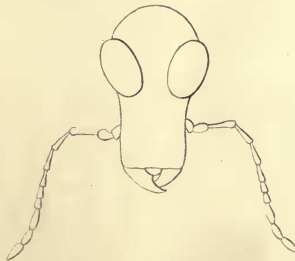
NESSIA



ESOCUS



DYSNOS



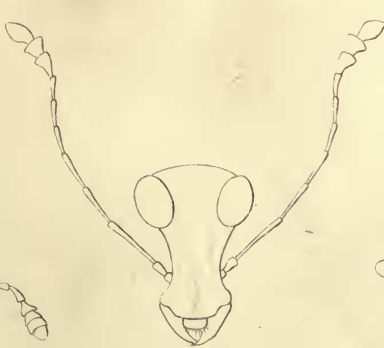
APATENIA



MISTHOSIMA



HYPSEUS



ECZESARIS



PHAULIMIA



PHEOCHROTUS

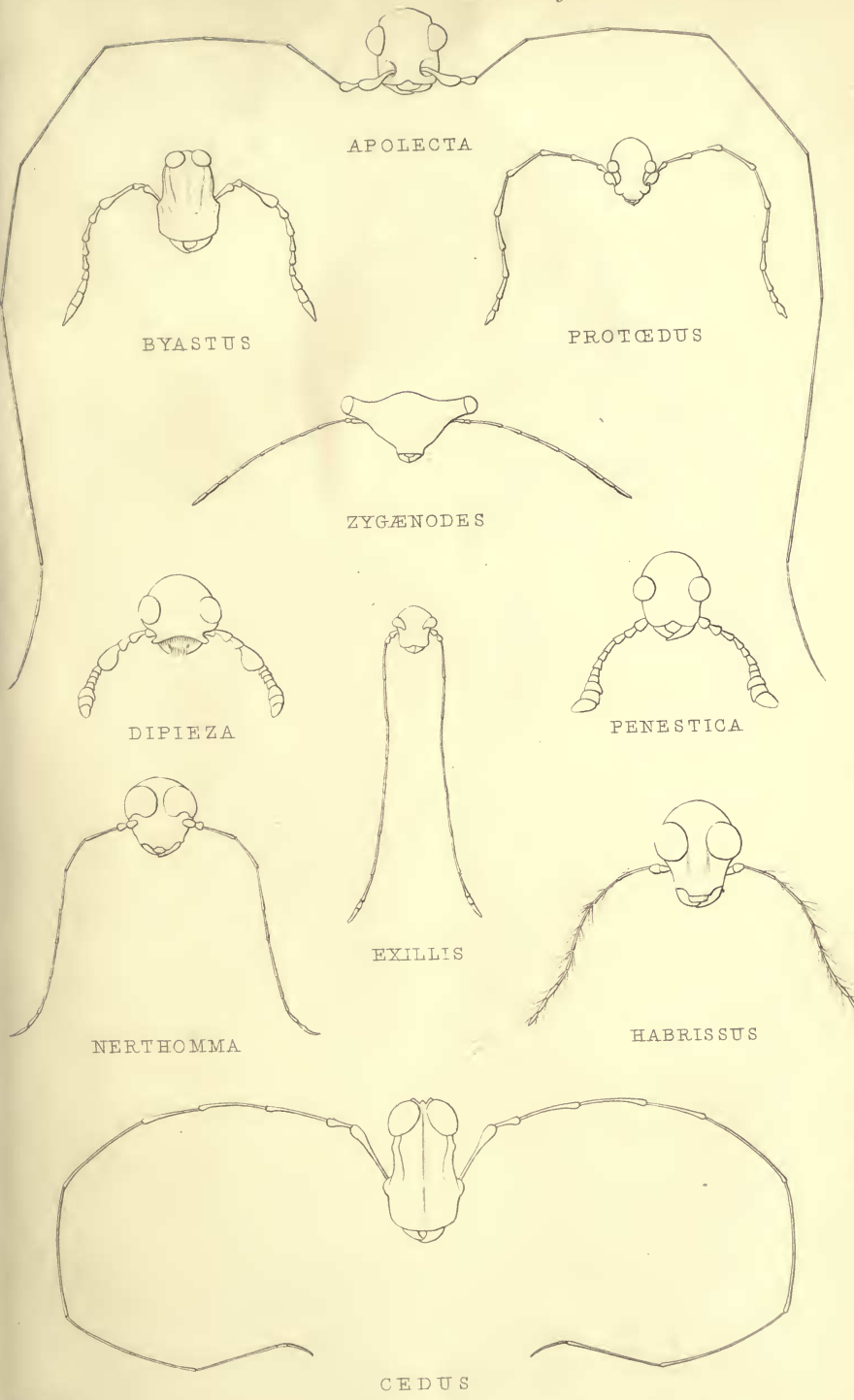


GENETH









APOLECTA

BYASTUS

PROTÆDUS

ZYGÆNODES

DIPIEZA

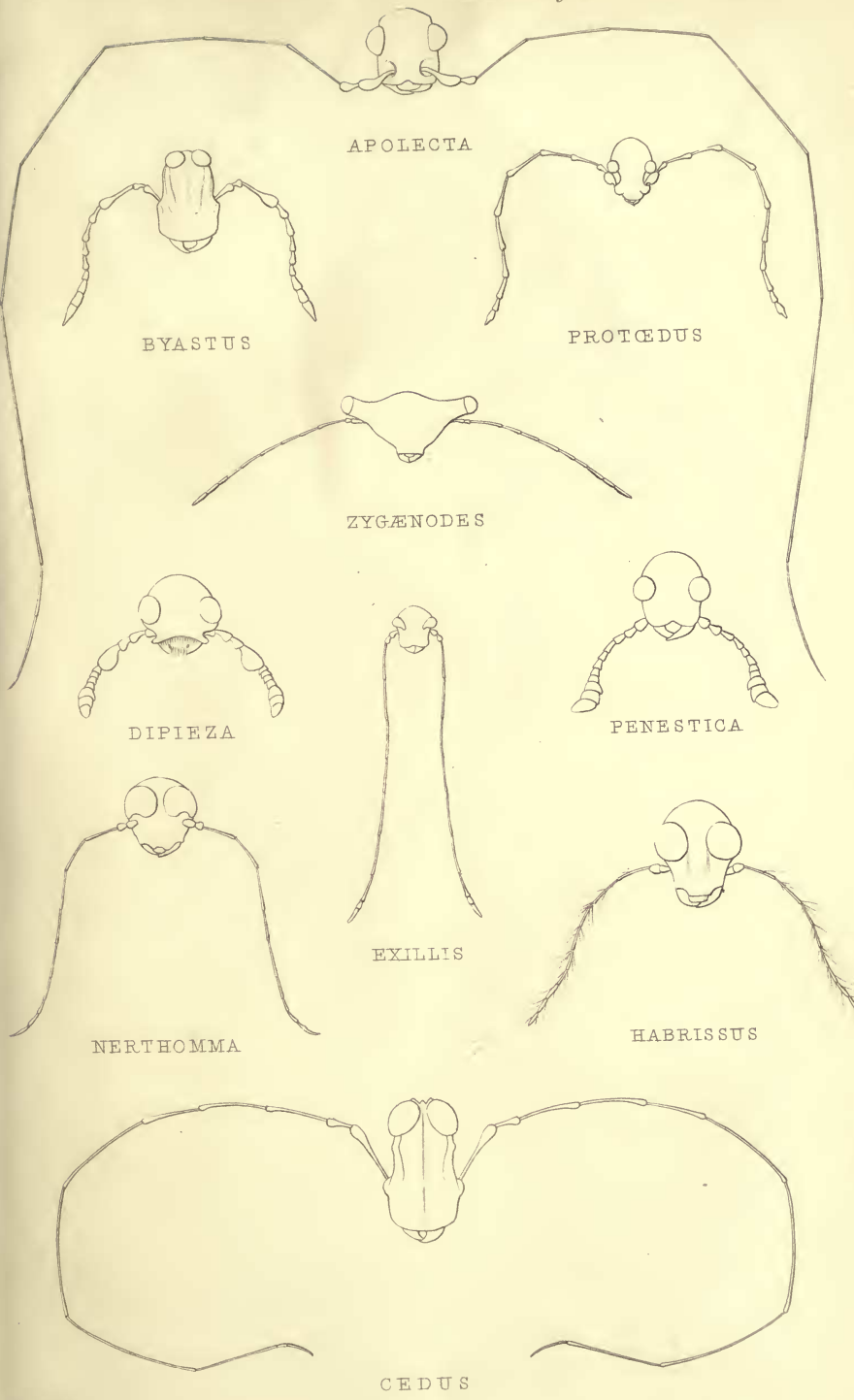
PENESTICA

NERTHOMMA

EXILLIS

HABRISSUS

CEDUS



APOLECTA

BYASTUS

PROTÆDUS

ZYGÆNODES

DIPIEZA

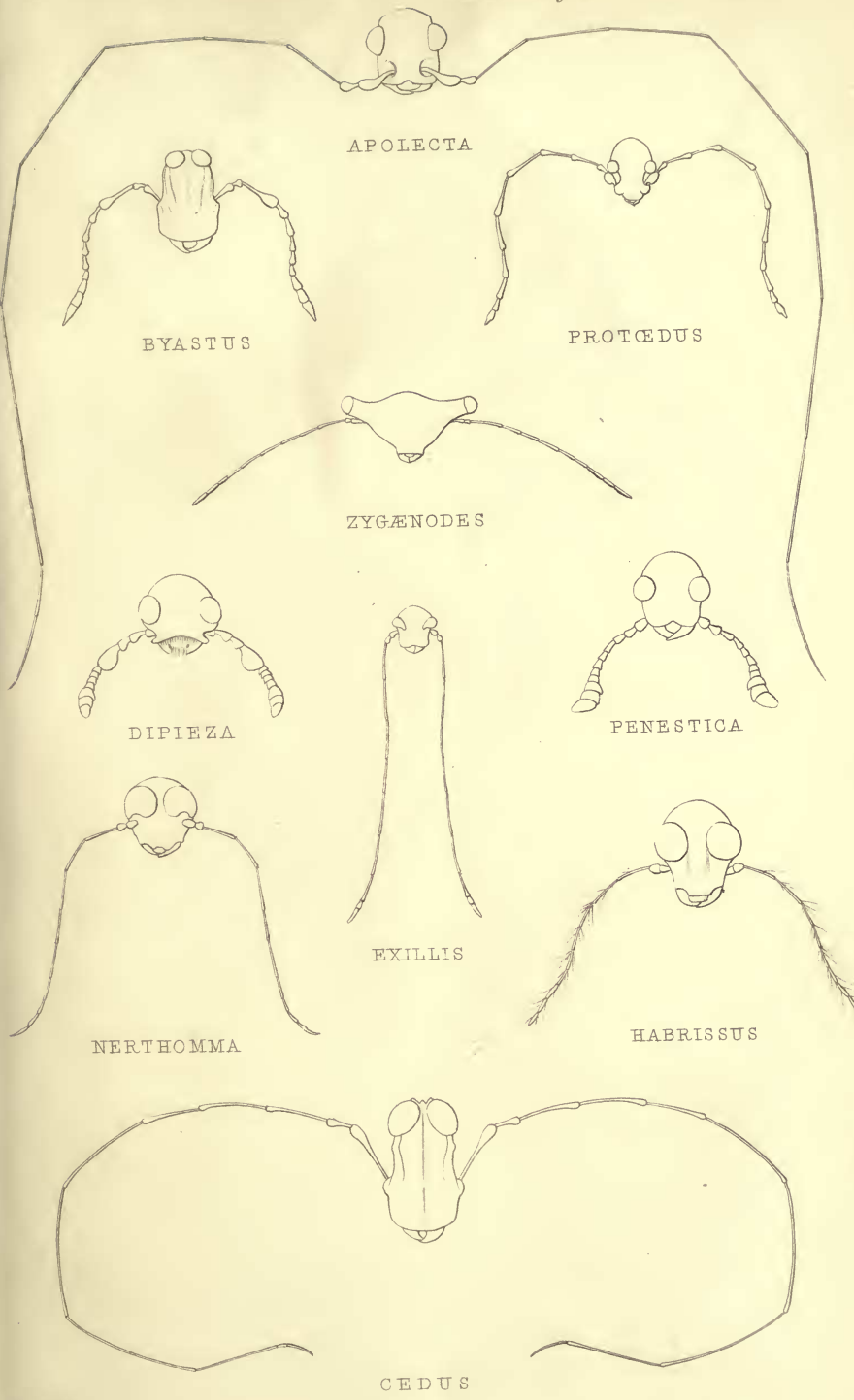
PENESTICA

NERTHOMMA

EXILLIS

HABRISSUS

CEDUS









apart, placed alternately on each side of the axis, with distinct digitate tubercles.

Hab. —. (Broken; perhaps imperfect.)

***Pinnules all adpressed, nearly transverse to the rachis.*

3. *V. juncea*, Esper, t. 14. Molucca and Borneo.

4. *V. Reinwardtii*, Herklots, Not. 13. t. 7. f. 8. Indian Seas. 1322

3. *LYGUS*, Herklots. Axis filiform, cylindrical, flexible, contracting spirally. Pinnules formed of diverging cells.

1. *L. mirabilis*, Müller, Zool. Dan. t. 11. North Sea; Scotland.

4. *SCYTALIUM*, Herklots. Axis quadrangular, thin. Rachis quadrangular. Pinnules small, triangular, placed obliquely on each side of the front of the rachis.

1. *S. Sarsii*, Herklots, Not. 14. t. 7. f. 6. North Sea.

Dr. Herklots refers to the *Funiculina cylindrica* of Lamarck with doubt. It has only been described from some stony axis. I think there is little doubt of this being the axis of the coral which I described as *Primnoella Australasiæ*, the axis of which agrees well with Lamarck's description. He also inquires what is the *Pennatula scirpea* of Pallas (Zooph. 372. no. 218)? which is not found in collections.

Tribe II. *PENNATULÆ*, or *Penniformes*, are Sea-pens with well-developed pinnules, shaped like a feather.

Dr. Herklots divides the Pens with the pinnæ supported by radiated spines into two genera; but I am not able to distinguish the genera *Pteromorpha* and *Pteroeides* by our specimens, though I believe that I have a specimen of the species which he gives as the type of his genus. I believe the character given to *Pteromorpha* (that is, the base of the pinnule being granular) depends on the state of the specimens, the granular coat of the pinnules being very deciduous in specimens which have been preserved in weak spirits. I may be wrong; if I am, then a specimen of *Pteromorpha* has not occurred to me.

I think the genera and species may be best arranged thus:—

5. *PENNATULA*, Linn. Pinnules elongate, angular, thin, membranaceous, strengthened by imbedded spicula. Cells in a single series on the edge. Rachis rough behind.

**Elongate, ovate, lanceolate; stem slender, ½ the entire length; cells separate.*

a 1. *P. phosphorea*. Pinnules linear, with isolated cells. Esper, 1322
t. 6. Europe; coast of England. *Helms*

apart, placed alternately on each side of the axis, with distinct digitate tubercles.

Hab. —. (Broken; perhaps imperfect.)

***Pinnules all adpressed, nearly transverse to the rachis.*

3. *V. juncea*, Esper, t. 14. Molucca and Borneo.

4. *V. Reinwardtii*, Herklots, Not. 13. t. 7. f. 8. Indian Seas. 1322

3. *LYGUS*, Herklots. Axis filiform, cylindrical, flexible, contracting spirally. Pinnules formed of diverging cells.

1. *L. mirabilis*, Müller, Zool. Dan. t. 11. North Sea; Scotland.

4. *SCYTALIUM*, Herklots. Axis quadrangular, thin. Rachis quadrangular. Pinnules small, triangular, placed obliquely on each side of the front of the rachis.

1. *S. Sarsii*, Herklots, Not. 14. t. 7. f. 6. North Sea.

Dr. Herklots refers to the *Funiculina cylindrica* of Lamarck with doubt. It has only been described from some stony axis. I think there is little doubt of this being the axis of the coral which I described as *Primnoella Australasica*, the axis of which agrees well with Lamarck's description. He also inquires what is the *Pennatula scirpea* of Pallas (Zooph. 372. no. 218)? which is not found in collections.

Tribe II. *PENNATULÆ*, or *Penniformes*, are Sea-pens with well-developed pinnules, shaped like a feather.

Dr. Herklots divides the Pens with the pinnæ supported by radiated spines into two genera; but I am not able to distinguish the genera *Pteromorpha* and *Pteroeides* by our specimens, though I believe that I have a specimen of the species which he gives as the type of his genus. I believe the character given to *Pteromorpha* (that is, the base of the pinnule being granular) depends on the state of the specimens, the granular coat of the pinnules being very deciduous in specimens which have been preserved in weak spirits. I may be wrong; if I am, then a specimen of *Pteromorpha* has not occurred to me.

I think the genera and species may be best arranged thus:—

5. *PENNATULA*, Linn. Pinnules elongate, angular, thin, membranaceous, strengthened by imbedded spicula. Cells in a single series on the edge. Rachis rough behind.

**Elongate, ovate, lanceolate; stem slender, ½ the entire length; cells separate.*

a 1. *P. phosphorea*. Pinnules linear, with isolated cells. Esper, 1322
t. 6. Europe; coast of England. *Helms*

apart, placed alternately on each side of the axis, with distinct digitate tubercles.

Hab. —. (Broken; perhaps imperfect.)

***Pinnules all adpressed, nearly transverse to the rachis.*

3. *V. juncea*, Esper, t. 14. Molucca and Borneo.

4. *V. Reinwardtii*, Herklots, Not. 13. t. 7. f. 8. Indian Seas. 1322

3. *LYGUS*, Herklots. Axis filiform, cylindrical, flexible, contracting spirally. Pinnules formed of diverging cells.

1. *L. mirabilis*, Müller, Zool. Dan. t. 11. North Sea; Scotland.

4. *SCYTALIUM*, Herklots. Axis quadrangular, thin. Rachis quadrangular. Pinnules small, triangular, placed obliquely on each side of the front of the rachis.

1. *S. Sarsii*, Herklots, Not. 14. t. 7. f. 6. North Sea.

Dr. Herklots refers to the *Funiculina cylindrica* of Lamarck with doubt. It has only been described from some stony axis. I think there is little doubt of this being the axis of the coral which I described as *Primnoella Australasica*, the axis of which agrees well with Lamarck's description. He also inquires what is the *Pennatula scirpea* of Pallas (Zooph. 372. no. 218)? which is not found in collections.

Tribe II. *PENNATULÆ*, or *Penniformes*, are Sea-pens with well-developed pinnules, shaped like a feather.

Dr. Herklots divides the Pens with the pinnæ supported by radiated spines into two genera; but I am not able to distinguish the genera *Pteromorpha* and *Pteroeides* by our specimens, though I believe that I have a specimen of the species which he gives as the type of his genus. I believe the character given to *Pteromorpha* (that is, the base of the pinnule being granular) depends on the state of the specimens, the granular coat of the pinnules being very deciduous in specimens which have been preserved in weak spirits. I may be wrong; if I am, then a specimen of *Pteromorpha* has not occurred to me.

I think the genera and species may be best arranged thus:—

5. *PENNATULA*, Linn. Pinnules elongate, angular, thin, membranaceous, strengthened by imbedded spicula. Cells in a single series on the edge. Rachis rough behind.

**Elongate, ovate, lanceolate; stem slender, ½ the entire length; cells separate.*

a 1. *P. phosphorea*. Pinnules linear, with isolated cells. Esper, 1322
t. 6. Europe; coast of England. *Helms*